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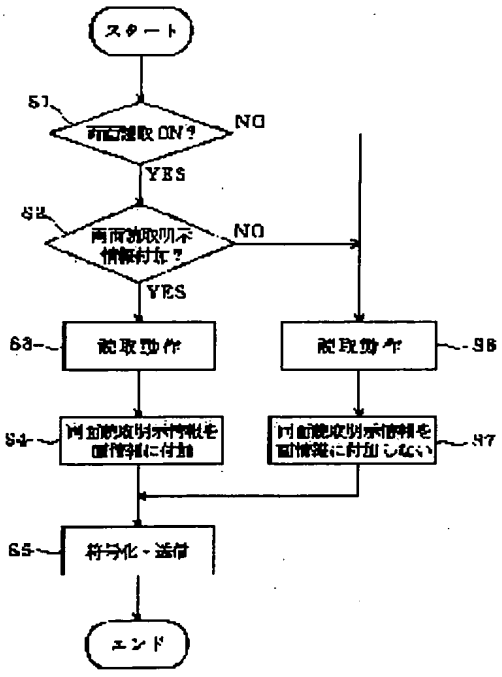
(54) FACSIMILE EQUIPMENT

(57)Abstract:
PROBLEM TO BE SOLVED: To provide the facsimile equipment where information to specify as to whether or not an original is a both-sides original whose information is read by one reading or to which side of surface/back sides image information belongs is added to transmission image information and that sends the resulting transmission image information.
SOLUTION: The facsimile equipment checks whether or not both side read specified information for specifying of double side reading or double side simultaneous reading is to be added to transmission image information. In the case of adding the specified information to the transmission image information, a surface side close contact sensor section and a backside close contact sensor section read an original simultaneously and the image is stored in an image information storage memory while being sorted for each page, double side read explicit information such as 'double side document' is added to image information for each page and the resulting image information is sent to an opposite facsimile equipment (steps S1-S5). In the case that the mode is not the double side reading mode or in the case that addition of double side read explicit information is not selected, the double side read explicit information is not added to the rear original image information and the resulting image information is transmitted (steps S6, S7, S5).



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CLAIMS

[Claim(s)]
[Claim 1] A surface reading means to read the image of the front face of a manuscript and to output drawing information, and a rear-face reading means to read the image of the rear face of said manuscript and to output drawing information, In the facsimile apparatus which performs double-sided coincidence reading which reads to coincidence the image of the double-sided manuscript with which the image was indicated to a preparation and both sides in one reading actuation with said surface reading means and said rear-face reading means A drawing information storage means to classify and memorize said drawing information on said double-sided manuscript which said surface reading means and said rear-face reading means read for every page, A double-sided information addition means to add the double-sided reading designation information which specifies the purport which is the drawing information which read said double-sided manuscript by said double-sided coincidence reading to the predetermined location of the drawing information on said page unit which said drawing information storage means memorizes, If said manuscript is read by said double-sided coincidence reading with said surface reading means and said rear-face reading means Facsimile apparatus characterized by having the control means which carries out facsimile transmission after making said double-sided reading designation information add to said drawing information on the page unit read by the double-sided coincidence reading concerned memorized by said drawing information storage means with said double-sided information addition means.
[Claim 2] A surface reading means to read the image of the front face of a manuscript and to output drawing information, and a rear-face reading means to read the image of the rear face of said manuscript and to output drawing information, In the facsimile apparatus which performs double-sided coincidence reading which reads to coincidence the image of the double-sided manuscript with which the image was indicated to a preparation and both sides in one reading actuation with said surface reading means and said rear-face reading means A drawing information storage means to classify and memorize said drawing information on said double-sided manuscript which said surface reading means and said rear-face reading means read for every page, A double-sided information addition means to add the front rear-face designation information which specifies whether it is the drawing information on which field while on the rear face of front of said double-sided manuscript to the predetermined location of said drawing information on said front face which said drawing information storage means memorizes, and said rear face, If said manuscript is read by said double-sided coincidence reading with said surface reading means and said rear-face reading means Facsimile apparatus characterized by having the control means which carries out facsimile transmission after making said table rear-face designation information add to said drawing information on said front face read by the double-sided coincidence reading concerned memorized by said drawing information storage means, and said rear face with said double-sided information addition means.
[Claim 3] The selection means which chooses whether said facsimile apparatus performs addition of said double-sided reading designation information by said double-sided information addition means, or said table rear-face designation information Only when it furthermore has and, as for said control means, addition of said double-sided reading designation information or said table

rear-face designation information is chosen by said selection means Facsimile apparatus according to claim 1 or 2 characterized by carrying out facsimile transmission after making said drawing information add said double-sided reading designation information or said table rear-face designation information to said double-sided information addition means.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the facsimile apparatus which reads in a detail the double-sided manuscript with which the image was recorded on the front face and the rear face in one reading actuation, and is transmitted to it about facsimile apparatus.
[0002]
[Description of the Prior Art] The facsimile apparatus which transmits and receives drawing information is developed and put in practical use by transmitting recently the drawing information which read the image of a manuscript with the scanner etc. to the other party through digital communication networks, such as analog communication networks, such as PSTN (Public Swiched Telephone Network: public telephone network), and ISDN (Integrated Services Digital Network : integrated services digital network).
[0003] However, since the drawing information which can be read at once with a scanner was only the single-sided side of a manuscript, when the double-sided manuscript with which the image is recorded on both the front face and the rear face was read, the conventional facsimile apparatus had to take the copy of the front face and rear face of a double-sided manuscript, had to scan the side front and the background by a unit of 1 time, respectively, and usually had the problem that the availability of facsimile apparatus was bad.
[0004] Then, the facsimile apparatus which raised the expedient nature on transmitting actuation of a double-sided manuscript is proposed by arranging a read station on both sides of the front face and rear face of a transmitting manuscript, respectively, and reading a double-sided image in one reading actuation conventionally, (refer to JP,2-124680,A).
[0005] However, if it was in this facsimile apparatus, also when the image was not indicated at the rear face of a manuscript, there was a problem of transmitting the reading drawing information on on the back, i.e., the drawing information on a blank paper, as it is.
[0006] Then, only when the data which read the rear face of a manuscript and were stored in memory are checked, it judges whether a rear face has a publication and the rear face of a manuscript has a publication conventionally, the double-sided manuscript transmitting method of the facsimile apparatus which transmits the information on on the back following transmission of the information on surface is proposed (refer to JP,2-39765,A).
[0007]
[Problem(s) to be Solved by the Invention] However, if it is in such conventional facsimile apparatus The double-sided manuscript with which the image was recorded on both the front face and the rear face is read in one reading actuation. In order to transmit the drawing information on on the back following transmission of the drawing information on surface, when it judged whether a rear face has the publication of an image, a rear face had the publication of an image and the availability of facsimile apparatus equipped with the double-sided reading function was only raised, in addition, there was a problem.
[0008] That is, when a double-sided manuscript was read by turning OFF a double-sided reading function, only the drawing information on one side of a double-sided manuscript was transmitted to the phase hand, but since it did not know whether the former manuscript (transmitting

manuscript) of the receiving manuscript concerned is a double-sided manuscript, after important information had been missing, the communication link of a transmitting side and a receiving side was completed, and the phase hand had the problem that the availability of facsimile apparatus was bad.

[0009] Moreover, without using the double-sided manuscript transmitting method of facsimile apparatus given in JP,2-39765,A When it reads by having turned ON the double-sided reading function and an one side manuscript is transmitted, on a phase hand The receiving manuscript with which drawing information was recorded, and the receiving manuscript of the blank paper with which drawing information is not recorded will be transmitted for every page, it has been mistaken that drawing information important for the operator of a receiving side was missing, and there was a problem that the availability of facsimile apparatus was bad.

[0010] Furthermore, if the manuscript with which the one side manuscript with which the image was indicated by only one side is intermingled is read in the double-sided manuscript of two or more sheets and it transmits to it even when it transmits using the double-sided manuscript transmitting method of facsimile apparatus given in JP,2-39765,A a receiving side -- which page of a receiving manuscript -- the front flesh side of a former manuscript (transmitting manuscript) -- in a receiving side, if it did not understand whether to have been which drawing information, for example, the application given in double-sided is mixed with the one side manuscript Since it did not know which page and which page of a receiving manuscript are the combination of the front flesh side of a former manuscript, a former manuscript could not be correctly reproduced with the copying machine in which double-sided record is possible, but there was a problem that the availability of facsimile apparatus was bad.

[0011] Then, if a double-sided manuscript is read by double-sided coincidence reading with a surface reading means and a rear-face reading means, invention according to claim 1 After making the double-sided reading designation information which specifies the purport which is the drawing information read by double-sided coincidence reading add to the drawing information on the page unit read by the double-sided coincidence reading concerned, by carrying out facsimile transmission Are a double-sided manuscript, and make it it turn out that it was read by the receiving side by double-sided coincidence reading, and a manuscript enables it to restore a receiving manuscript to it like a transmitting manuscript by the receiving side at appropriateness and authenticity. Also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the middle of the double-sided manuscript, and double feed etc. occurs It aims at offering the good facsimile apparatus of availability which can respond appropriately and easily.

[0012] If a double-sided manuscript is read by double-sided coincidence reading with a surface reading means and a rear-face reading means, invention according to claim 2 After making the front rear-face designation information which specifies whether it is the drawing information on which field while on the rear face of front of a double-sided manuscript add to the drawing information on the front face read by the double-sided coincidence reading concerned, and a rear face, by carrying out facsimile transmission It is made to turn out whether to be which page. a receiving side -- a manuscript -- a double-sided manuscript -- it is -- which page of a receiving manuscript -- the front rear face of a transmitting manuscript -- It enables it to restore a receiving manuscript to appropriateness and authenticity like a transmitting manuscript further by the receiving side. Also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the middle of the double-sided manuscript, and double feed etc. occurs It aims at offering the good facsimile apparatus of availability which can respond much more appropriately and easily.

[0013] Only when addition of double-sided reading designation information or front rear-face designation information is chosen by the selection means, after invention according to claim 3 makes double-sided reading designation information or front rear-face designation information add to drawing information, by carrying out facsimile transmission Only when transmitting to the addressee who wants to tell that they are the case where a transmitting manuscript requires distinction on the rear face of front strictly, and a double-sided manuscript, add double-sided

reading designation information and front rear-face designation information, and it transmits. It aims at offering the good facsimile apparatus of availability, without increasing the amount of drawing information superfluously.

[0014]

[Means for Solving the Problem] A surface reading means for the facsimile apparatus of invention according to claim 1 to read the image of the front face of a manuscript, and to output drawing information, A rear-face reading means to read the image of the rear face of said manuscript and to output drawing information, In the facsimile apparatus which performs double-sided coincidence reading which reads to coincidence the image of the double-sided manuscript with which the image was indicated to a preparation and both sides in one reading actuation with said surface reading means and said rear-face reading means A drawing information storage means to classify and memorize said drawing information on said double-sided manuscript which said surface reading means and said rear-face reading means read for every page, A double-sided information addition means to add the double-sided reading designation information which specifies the purport which is the drawing information which read said double-sided manuscript by said double-sided coincidence reading to the predetermined location of the drawing information on said page unit which said drawing information storage means memorizes, If said manuscript is read by said double-sided coincidence reading with said surface reading means and said rear-face reading means After making said double-sided reading designation information add to said drawing information on the page unit read by the double-sided coincidence reading concerned memorized by said drawing information storage means with said double-sided information addition means, the above-mentioned purpose is attained by having the control means which carries out facsimile transmission.

[0015] If a double-sided manuscript is read by double-sided coincidence reading with a surface reading means and a rear-face reading means according to the above-mentioned configuration Since facsimile transmission is carried out after making the double-sided reading designation information which specifies the purport which is the drawing information read by double-sided coincidence reading add to the drawing information on the page unit read by the double-sided coincidence reading concerned A manuscript is a double-sided manuscript, and it can turn out that it was read by double-sided coincidence reading, and can make it possible to restore a receiving manuscript to a receiving side like a transmitting manuscript by the receiving side at appropriateness and authenticity. Therefore, also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the middle of the double-sided manuscript, and double feed etc. occurs, it can respond appropriately and easily and the availability of facsimile apparatus can be raised.

[0016] A surface reading means for the facsimile apparatus of invention according to claim 2 to read the image of the front face of a manuscript, and to output drawing information, A rear-face reading means to read the image of the rear face of said manuscript and to output drawing information, In the facsimile apparatus which performs double-sided coincidence reading which reads to coincidence the image of the double-sided manuscript with which the image was indicated to a preparation and both sides in one reading actuation with said surface reading means and said rear-face reading means A drawing information storage means to classify and memorize said drawing information on said double-sided manuscript which said surface reading means and said rear-face reading means read for every page, A double-sided information addition means to add the front rear-face designation information which specifies whether it is the drawing information on which field while on the rear face of front of said double-sided manuscript to the predetermined location of said drawing information on said front face which said drawing information storage means memorizes, and said rear face, If said manuscript is read by said double-sided coincidence reading with said surface reading means and said rear-face reading means After making said table rear-face designation information add to said drawing information on said front face read by the double-sided coincidence reading concerned memorized by said drawing information storage means, and said rear face with said double-sided information addition means, the above-mentioned purpose is attained by having the control

means which carries out facsimile transmission.
[0017] If a double-sided manuscript is read by double-sided coincidence reading with a surface reading means and a rear-face reading means according to the above-mentioned configuration Since facsimile transmission is carried out after making the front rear-face designation information which specifies whether it is the drawing information on which field while on the rear face of front of a double-sided manuscript add to the drawing information on the front face read by the double-sided coincidence reading concerned, and a rear face a receiving side -- a manuscript -- a double-sided manuscript -- it is -- which page of a receiving manuscript -- the front rear face of a transmitting manuscript -- or [that it is which page] -- understanding -- making -- a receiving side -- a receiving manuscript -- more -- much more -- appropriateness -- and it can make it possible to restore like a transmitting manuscript certainly Therefore, also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the middle of the double-sided manuscript, and double feed etc. occurs, it can respond much more appropriately and easily, and the availability of facsimile apparatus can be raised.
[0018] In each above-mentioned ****, so that it may indicate to claim 3 said facsimile apparatus It has further the selection means which chooses whether addition of said double-sided reading designation information by said double-sided information addition means or said table rear-face designation information is performed. Said control means Facsimile transmission may be carried out after making said drawing information add said double-sided reading designation information or said table rear-face designation information to said double-sided information addition means, only when addition of said double-sided reading designation information or said table rear-face designation information is chosen by said selection means.
[0019] Since according to the above-mentioned configuration facsimile transmission is carried out after making double-sided reading designation information or front rear-face designation information add to drawing information only when addition of double-sided reading designation information or front rear-face designation information is chosen by the selection means Only when transmitting to the addressee who wants to tell that they are the case where a transmitting manuscript requires distinction on the rear face of front strictly, and a double-sided manuscript, double-sided reading designation information and front rear-face designation information can be added, and it can transmit. The availability of facsimile apparatus can be raised without increasing the amount of drawing information superfluously.
[0020]
[Embodiment of the Invention] Hereafter, the gestalt of suitable operation of this invention is explained to a detail based on an accompanying drawing. In addition, since the gestalt of the operation described below is a gestalt of suitable operation of this invention, desirable various limitation is attached technically, but especially the range of this invention is not restricted to these modes, as long as there is no publication of the purport which limits this invention in the following explanation.
[0021] Drawing 1 - drawing 5 are drawings showing the gestalt of 1 operation of the facsimile apparatus of this invention, and drawing 1 is the important section circuit block diagram of the facsimile apparatus 1 which applied the gestalt of 1 operation of the facsimile apparatus of this invention.
[0022] In drawing 1 , facsimile apparatus 1 is equipped with a control section 2, the surface adhesion sensor section 3, the rear-face adhesion sensor section 4, the A/D-conversion section 5, the digital-image-processing section 6, the memory 7 for drawing information storage, a modem 8, the communication link analog section 9, the actuation display 10, the character data generation section 11, a line buffer 12, and coding / decryption section 13 grade, and each part of the above is connected by the bus 14.
[0023] A control section (control means) 2 is equipped with CPU (Central Processing Unit), ROM (Read Only Memory), RAM (Random Access Memory), etc., and various data, system data, etc. required to perform the various programs and each above-mentioned program of facsimile apparatus 1, such as a system program and a double-sided drawing information-control processing program mentioned later, are stored in ROM. A control section 2 performs double-

sided drawing information-control processing while it controls each part of facsimile apparatus 1 and the CPU performs primitive operation as facsimile apparatus 1, using RAM as work-piece memory based on the program in ROM. Moreover, a control section 2 memorizes the setting information on whether the double-sided reading designation information and front rear-face designation information which form and mention the User Information management domain later to a part of the RAM are added to drawing information to the User Information management domain.

[0024] The adhesion image scanner using CCD (Charge Coupled Device) is used, and the surface adhesion sensor section (surface reading means) 3 is arranged along the conveyance way of a manuscript. The surface adhesion sensor section 3 scans the front face of the manuscript which has a conveyance on the street conveyed, reads the image of the front face of a manuscript, and outputs it to the A/D-conversion section 5 as drawing information.

[0025] The adhesion image scanner using CCD is used like the surface adhesion sensor section 3, and the rear-face adhesion sensor section (rear-face reading means) 4 is arranged in the surface adhesion sensor section 3 and the opposite side of the conveyance way concerned along the conveyance way of a manuscript. The rear-face adhesion sensor section 4 scans the rear face of a manuscript, reads the image of the rear face of a manuscript, and outputs it to the A/D-conversion section 5 as drawing information. In addition, a surface reading means and a rear-face reading means may not be restricted to what used the adhesion sensor like the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 as mentioned above, and contraction optical system may be used for them.

[0026] It consists of hard disks etc., and the memory 7 for drawing information storage (drawing information storage means) accumulates the received coding drawing information while accumulating the coding drawing information on all the manuscripts encoded in the raw drawing information and coding / decryption section 13 which were read by the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 etc.

[0027] A modem 8 operates under control of a control section 2, and performs the modulation of a sending signal, and the recovery of an input signal.

[0028] While the communication link analog section 9 operates under control of a control section 2, and carries out an automatic call in to the call origination from Circuit L by connecting with Circuit L, for example, a dial-up line, and performing automatic call origination processing to Circuit L in the communication link analog section 9, a facsimile control signal is exchanged between partner facsimile apparatus, and a facsimile communication procedure is performed.

[0029] While the actuation display (selection means) 10 is equipped with various actuation keys, such as a ten key, and a start key, a function key, it has a display (for example, liquid crystal display), and from an actuation key, various instructions, such as transmitting actuation, are inputted and the various information of which an operator is notified from the contents of an instruction and facsimile apparatus 1 which were inputted from the actuation key is displayed on a display. The coincidence reading ON / off key which sets ON/OFF of coincidence reading of whether a manuscript is read to coincidence by the surface adhesion mold sensor section 3 and the rear-face adhesion sensor section 4 to the actuation display 10 especially, The front rear-face designation information addition setting key which sets up whether the double-sided reading designation information addition setting key and ** table rear-face designation information that it sets up whether double-sided reading designation information is added to drawing information in double-sided drawing information-control processing are added to drawing information is prepared. The contents of a setting of these coincidence reading ON / off keys, a double-sided reading designation information addition setting key, and a front rear-face designation information addition setting key are memorized in the User Information management domain of RAM of a control section 2.

[0030] Various character data and when double-sided coincidence reading is performed especially, the character data generation section 11 memorizes the front rear-face designation information which specifies the double-sided reading designation information which specifies the purport that double-sided coincidence reading was performed, and a front rear face, under control of a control section 2, generates such double-sided reading designation information and

front rear-face designation information, and transmits them to a line buffer 12.
[0031] If a line buffer 12 memorizes the drawing information encoded or decrypted in coding / decryption section 13 by one line and the drawing information for one line is accumulated, it will transmit the drawing information concerned to coding / decryption section 13. If 1-page head Rhine is transmitted to a line buffer 12 from the memory 7 for drawing information storage, a control section 2 will transmit double-sided reading designation information or front rear-face designation information to a line buffer 12 from the character data generation section 11, will overwrite drawing information for double-sided reading designation information or front rear-face designation information, and will add double-sided reading designation information or front rear-face designation information to drawing information. Therefore, the above-mentioned character data generation section 11 and a line buffer 12 function as a double-sided information addition means.
[0032] Coding / decryption section 13 is for attaining increase in efficiency of are recording of drawing information, and shortening of a transmission time, encodes drawing information according to a predetermined coding method, and decrypts the encoded drawing information.
[0033] Next, actuation of the gestalt of this operation is explained. Although facsimile apparatus 1 reads the image of the front flesh side of a double-sided manuscript to coincidence by the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 and carries out facsimile transmission The double-sided reading designation information on whether coincidence reading by the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 was performed, Moreover, the description is in the place which performs double-sided drawing information-control processing which adds the front rear-face designation information which shows whether it is the drawing information read by any of the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 by an operator's selection.
[0034] First, the double-sided drawing information-control processing in the case of adding the double-sided reading designation information which shows whether it is double-sided coincidence reading to drawing information according to a user's selection is explained below based on drawing 2 and drawing 3 .
[0035] If facsimile apparatus 1 is set to the manuscript base which a manuscript does not illustrate, a transmitting phase hand's telephone number is inputted by the actuation display 10 and a start key is supplied If it checks (step S1) and double-sided coincidence reading is set to ON, whether double-sided coincidence reading is set for the control section 2 by the key stroke of the actuation display 10 The User Information management domain of RAM of a control section 2 is investigated, and it confirms whether add double-sided reading designation information on the purport which is double-sided coincidence reading (step S2).
[0036] At step S2, in adding double-sided reading designation information As a control section 2 makes the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 drive, and performs reading actuation of a manuscript (step S3) and it is shown in the drawing information on the image of the read manuscript at drawing 3 After the transmitting drawing information concerned adds the double-sided reading designation information which shows the purport which is the drawing information which performed double-sided coincidence reading, for example, a "double-sided document", (step S4) and encodes in coding / decryption section 13, it transmits (step S5).
[0037] Namely, in [section / 4 / the surface adhesion sensor section 3 and / rear-face adhesion sensor] this case, perform the image of the front face and rear face of a manuscript to coincidence, and it reads for every Rhine. After inputting drawing information into the A/D-conversion section 5 for every Rhine by turns from the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 and carrying out digital conversion of the drawing information concerned in the A/D-conversion section 5, in the digital-image-processing section 6 A required image processing is performed and the drawing information on surface and the drawing information on on the back are classified, and it divides into the memory 7 for drawing information storage, and is made to memorize. For example, it faces accumulating the drawing information for every Rhine which carried out the image processing in the digital-image-processing section 6 in the memory 7 for drawing information storage, and while classifying the

drawing information on the front face of a manuscript, and the drawing information on on the back by storing in the address with which the memory 7 for drawing information storage continues at intervals of a line, it accumulates the drawing information on surface, and 1 page of drawing information on on the back at a time in the continuous address, respectively. When the drawing information on all manuscripts is read to coincidence in the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4, it classifies at a front face and the rear face as mentioned above and it accumulates in the memory 7 for drawing information storage, a control section 2 It is beginning to read one by one from head Rhine of the drawing information on the front face which is a head page among the drawing information accumulated in the memory 7 for drawing information storage. It transmits to a line buffer 12, it transmits to coding / decryption section 13 from a line buffer 12, and is made to encode by the coding method predetermined in coding / decryption section 13.

[0038] If a control section 2 transmits the drawing information on several lines of the head of a head page to a line buffer 12 at this time The character data generation section 11 is made to generate the character data of double-sided reading designation information. Like the sending agency information addition function (TTI) of facsimile apparatus 1 by the character data of the double-sided reading designation information concerned It transmits to a line buffer 12 and double-sided reading designation information is added to drawing information by overwriting a part of drawing information on a line buffer 12.

[0039] For example, the character data generation section 11 is equipped with I/F in which data transfer is possible with the same configuration as drawing information on the line buffer 12, and adds double-sided reading designation information to drawing information by overwriting the drawing information on a line buffer 12 while it generates the text which connects one character (alphabetic character) expressed in several pixel x number Rhine (for example, 16 pixels x 16 lines), and can do it.

[0040] Thus, in coding / decryption section 13, it encodes and facsimile transmission of the drawing information to which double-sided reading designation information was added is carried out through a modem 8 and the communication link analog section 9 at partner facsimile apparatus.

[0041] The above-mentioned processing is performed for every drawing information on each page, and facsimile transmission of the drawing information which added double-sided reading designation information for every page of drawing information as shown in drawing 3 , and added the double-sided reading designation information concerned is carried out.

[0042] At the above-mentioned step S2, when not adding double-sided reading designation information, a control section 2 reads a manuscript like the above by the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4, like the above of the read drawing information, is classified for every page and accumulates it in the memory 7 for drawing information storage (step S6). After performing chisels, such as addition of the usual TTI, if needed, without beginning to read one by one from head Rhine of a head page from the memory 7 for drawing information storage, transmitting to a line buffer 12, and performing attached processing of double-sided reading designation information by the line buffer 12, if double-sided coincidence reading of all manuscripts is completed next (step S7), it encodes and transmits in coding / decryption section 13 (step S5).

[0043] moreover, at the above-mentioned step S1, when it is not double-sided reading A control section 2 [any of the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 they are, the set condition, i.e., the manuscript side, of a manuscript to a manuscript base, and] Or according to selection of the actuation display 10, the surface adhesion sensor section 3 or the rear-face adhesion sensor section 4 is driven, the image of a manuscript is read one by one, and it accumulates in the memory 7 for drawing information storage. In this case, usually the manuscript side where the image was memorized is turned, it is set to the surface adhesion sensor section 3 side, and the image of a manuscript is read by the surface adhesion sensor section 3 (step S6).

[0044] If reading of the image of all manuscripts and the are recording to the memory 7 for drawing information storage are completed, without beginning to read drawing information one by

one from head Rhine of a head page from the memory 7 for drawing information storage, and adding double-sided reading designation information to drawing information through a line buffer 12, a control section 2 will be transmitted to coding / decryption section 13 (step S7), will encode drawing information in coding / decryption section 13, and will carry out facsimile transmission at phase hand facsimile apparatus.

[0045] Therefore, if a double-sided manuscript is read by double-sided coincidence reading in the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 Since facsimile transmission is carried out after adding the double-sided reading designation information which specifies the purport which is the drawing information read by double-sided coincidence reading to the drawing information on the page unit read by the double-sided coincidence reading concerned A manuscript is a double-sided manuscript, and it can turn out that it was read by double-sided coincidence reading, and can make it possible to restore a receiving manuscript to a receiving side like a transmitting manuscript by the receiving side at appropriateness and authenticity. Therefore, also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the middle of the double-sided manuscript, and double feed etc. occurs, it can respond appropriately and easily and the availability of facsimile apparatus 1 can be raised.

[0046] Moreover, since double-sided reading designation information is made to add to drawing information and facsimile transmission is carried out only when addition of double-sided reading designation information is chosen The availability of facsimile apparatus 1 can be raised without being able to add double-sided reading designation information, being able to transmit, and increasing the amount of drawing information superfluously, only when transmitting to the addressee who wants to tell that they are the case where a transmitting manuscript requires distinction on the rear face of front strictly, and a double-sided manuscript.

[0047] In addition, although the case where double-sided reading designation information was added to several line part of the head of a page was explained in the above-mentioned processing, the location which double-sided reading designation information adds is not restricted to the part for several lines of the head of a page, and as long as it is a part, it may be added to any location by influencing reading of the image of a manuscript, and twisting and being vacant. Moreover, the approach of adding is not restricted to the above-mentioned approach. Furthermore, although double-sided reading designation information is added to all pages, it does not restrict to what is added to all pages, and you may make it add double-sided reading designation information only to a predetermined page in the above-mentioned processing only at a head page.

[0048] Next, the double-sided drawing information information-control processing in the case of adding the front rear-face designation information which clarifies a front rear face according to a user's selection to the drawing information which performed double-sided coincidence reading is explained below based on drawing 4 and drawing 5 .

[0049] If facsimile apparatus 1 is set to the manuscript base which a manuscript does not illustrate, a transmitting phase hand's telephone number is inputted by the actuation display 10 and a start key is supplied If it checks (step P1) and double-sided coincidence reading is set to ON, whether double-sided coincidence reading is set for the control section 2 by the key stroke of the actuation display 10 The User Information management domain of RAM of a control section 2 is investigated, and it confirms whether add front rear-face designation information which shows whether it is which field on the rear face of front of the manuscript by which double-sided coincidence reading was carried out (step P2).

[0050] At step P2, in adding front rear-face designation information As a control section 2 makes the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 drive, and performs reading actuation of a manuscript (step P3) and it is shown in the drawing information on the image of the read manuscript at drawing 5 the transmitting drawing information concerned -- a front flesh side -- the front rear-face designation information which shows whether it is which drawing information -- For example, it transmits, after distinguishing the front flesh side of the drawing information concerned (step P4), adding a "table" and a "flesh

side" to the drawing information on each front flesh side (steps P5 and P6) and encoding in coding / decryption section 13 (step P7).

[0051] Namely, like the above, from the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4, perform the image of the front face and rear face of a manuscript to coincidence, and it reads for every Rhine. After inputting drawing information into the A/D-conversion section 5 for every Rhine by turns from the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 and carrying out digital conversion of the drawing information concerned in the A/D-conversion section 5, in the digital-image-processing section 6 A required image processing is performed, it classifies to the drawing information on surface, and the drawing information on on the back, and the memory 7 for drawing information storage is made to memorize. When the drawing information on all manuscripts is read to coincidence in the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4, it classifies at a front face and the rear face as mentioned above and it accumulates in the memory 7 for drawing information storage, a control section 2 It is being begun from head Rhine of the drawing information on surface to read the drawing information on the memory 7 for drawing information storage one by one. If it transmits to a line buffer 12, for example, the top drawing information on several lines is transmitted to a line buffer 12 Distinguish whether it is the drawing information on which field, and the character data generation section 11 is made to generate the character data of the front rear-face designation information corresponding to the front flesh side concerned. the drawing information concerned -- a front flesh side -- The character data of the front rear-face designation information concerned is transmitted to a line buffer 12, and front rear-face designation information is added to drawing information by overwriting a part of drawing information on a line buffer 12.

[0052] Thus, in coding / decryption section 13, it encodes and facsimile transmission of the drawing information to which front rear-face designation information was added is carried out through a modem 8 and the communication link analog section 9 at partner facsimile apparatus.

[0053] The above-mentioned processing is performed for every drawing information on each page, and facsimile transmission of the drawing information which added front rear-face designation information for every page of drawing information as shown in drawing 5 , and added the front rear-face designation information concerned is carried out.

[0054] At the above-mentioned step P2, when not adding front rear-face designation information, a control section 2 reads a manuscript like the above by the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4, like the above of the read drawing information, is classified for every page and accumulates it in the memory 7 for drawing information storage (step P8). After performing chisels, such as addition of the usual TTI, if needed, without beginning to read one by one from head Rhine of a head page from the memory 7 for drawing information storage, transmitting to a line buffer 12, and performing attached processing of front rear-face designation information by the line buffer 12, if double-sided coincidence reading of all manuscripts is completed next, it encodes and transmits in coding / decryption section 13 (step P7).

[0055] moreover, at the above-mentioned step P1, when it is not double-sided coincidence reading A control section 2 [any of the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 they are, the set condition, i.e., the manuscript side, of a manuscript to a manuscript base, and] Or according to selection of the actuation display 10, the surface adhesion sensor section 3 or the rear-face adhesion sensor section 4 is driven, the image of a manuscript is read one by one, and it accumulates in the memory 7 for drawing information storage (step P8). In this case, usually the manuscript side where the image was memorized is turned, a manuscript is set to the surface adhesion sensor section 3 side, and the image of a manuscript is read by the surface adhesion sensor section 3.

[0056] If reading of the image of all manuscripts and the are recording to the memory 7 for drawing information storage are completed, without beginning to read drawing information one by one from head Rhine of a head page from the memory 7 for drawing information storage, and adding front rear-face designation information to drawing information through a line buffer 12, a control section 2 will be transmitted to coding / decryption section 13, will encode drawing

information in coding / decryption section 13, and will carry out facsimile transmission at phase hand facsimile apparatus (step P7).
[0057] Thus, if a double-sided manuscript is read by double-sided coincidence reading in the surface adhesion sensor section 3 and the rear-face adhesion sensor section 4 according to the above-mentioned processing Since facsimile transmission is carried out after adding the front rear-face designation information which specifies whether it is the drawing information on which field while on the rear face of front of a double-sided manuscript to the drawing information on the front face read by the double-sided coincidence reading concerned, and a rear face a receiving side -- a manuscript -- a double-sided manuscript -- it is -- which page of a receiving manuscript -- the front rear face of a transmitting manuscript -- it turns out whether to be which page -- as -- it can carry out -- a receiving side -- a receiving manuscript -- more -- much more -- appropriateness -- and it can make it possible to restore like a transmitting manuscript certainly Therefore, also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the middle of the double-sided manuscript, and double feed etc. occurs, it can respond much more appropriately and easily, and the availability of facsimile apparatus 1 can be raised.
[0058] Moreover, since facsimile transmission is carried out after making front rear-face designation information add to drawing information only when addition of front rear-face designation information is chosen The availability of facsimile apparatus 1 can be raised without being able to add table rear-face designation information, being able to transmit, and increasing the amount of drawing information superfluously, only when transmitting to the addressee who wants to tell that they are the case where a transmitting manuscript requires distinction on the rear face of front strictly, and a double-sided manuscript.
[0059] As mentioned above, although invention made by this invention person was concretely explained based on the gestalt of suitable operation, it cannot be overemphasized that it can change variously in the range which this invention is not limited to the above-mentioned thing, and does not deviate from the summary.
[0060]
[Effect of the Invention] If a double-sided manuscript is read by double-sided coincidence reading with a surface reading means and a rear-face reading means according to the facsimile apparatus of invention according to claim 1 Since facsimile transmission is carried out after making the double-sided reading designation information which specifies the purport which is the drawing information read by double-sided coincidence reading add to the drawing information on the page unit read by the double-sided coincidence reading concerned A manuscript is a double-sided manuscript, and it can turn out that it was read by double-sided coincidence reading, and can make it possible to restore a receiving manuscript to a receiving side like a transmitting manuscript by the receiving side at appropriateness and authenticity. Therefore, also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the middle of the double-sided manuscript, and double feed etc. occurs, it can respond appropriately and easily and the availability of facsimile apparatus can be raised.
[0061] If a double-sided manuscript is read by double-sided coincidence reading with a surface reading means and a rear-face reading means according to the facsimile apparatus of invention according to claim 2 Since facsimile transmission is carried out after making the front rear-face designation information which specifies whether it is the drawing information on which field while on the rear face of front of a double-sided manuscript add to the drawing information on the front face read by the double-sided coincidence reading concerned, and a rear face a receiving side -- a manuscript -- a double-sided manuscript -- it is -- which page of a receiving manuscript -- the front rear face of a transmitting manuscript -- or [that it is which page] -- understanding -- making -- a receiving side -- a receiving manuscript -- more -- much more -- appropriateness -- and it can make it possible to restore like a transmitting manuscript certainly Therefore, also when the problem that two or more pages are missing with the case where the one side manuscript, i.e., the manuscript whose rear face is a blank paper, is contained in the

middle of the double-sided manuscript, and double feed etc. occurs, it can respond much more appropriately and easily, and the availability of facsimile apparatus can be raised.
[0062] Only when addition of double-sided reading designation information or front rear-face designation information is chosen by the selection means according to the facsimile apparatus of invention according to claim 3 Since facsimile transmission is carried out after making double-sided reading designation information or front rear-face designation information add to drawing information Only when transmitting to the addressee who wants to tell that they are the case where a transmitting manuscript requires distinction on the rear face of front strictly, and a double-sided manuscript, double-sided reading designation information and front rear-face designation information can be added, and it can transmit. The availability of facsimile apparatus can be raised without increasing the amount of drawing information superfluously.

[Translation done.]

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The important section circuit block diagram of the facsimile apparatus which applied the gestalt of 1 operation of the facsimile apparatus of this invention.
[Drawing 2] The flow chart which shows the double-sided drawing information-control processing in the case of adding double-sided reading designation information to drawing information according to selection of the user by the facsimile apparatus of drawing 1 .
[Drawing 3] The front view and its important section enlarged drawing of the transmitting manuscript with which double-sided reading designation information was added by double-sided drawing information-control processing of drawing 2 .
[Drawing 4] The flow chart which shows the double-sided drawing information-control processing in the case of adding front rear-face designation information to drawing information according to selection of the user by the facsimile apparatus of drawing 1 .
[Drawing 5] The front view of the transmitting manuscript with which front rear-face designation information was added by double-sided drawing information-control processing of drawing 4 .
[Description of Notations]
1 Facsimile Apparatus
2 Control Section
3 Surface Adhesion Sensor Section
4 Rear-Face Adhesion Sensor Section
5 A/D-Conversion Section
6 Digital-Image-Processing Section
7 Memory for Drawing Information Storage
8 Modem
9 Communication Link Analog Section
10 Actuation Display
11 Character Data Generation Section
12 Line Buffer
13 Coding / Decryption Section
14 Bus

[Translation done.]

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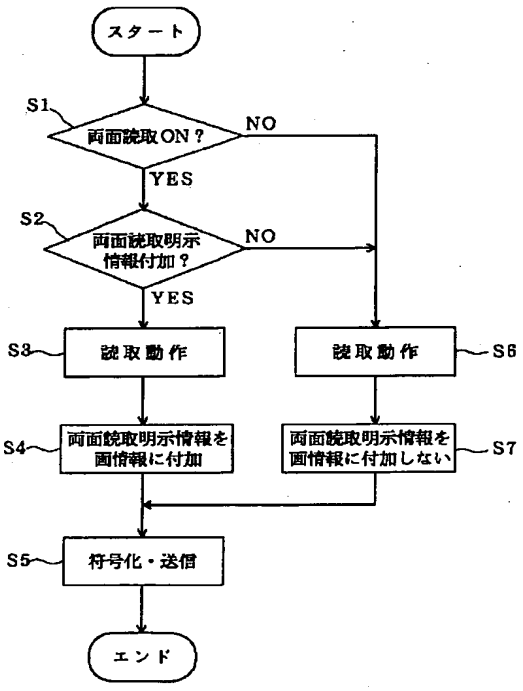
(54)【発明の名称】　ファクシミリ装置

(57)【要約】

【課題】本発明は両面原稿を一回の読取動作で読み取った原稿であるかどうかや表裏面のいずれの画情報であるかを明示する情報を送信画情報に付加して送信するファクシミリ装置を提供する。

【解決手段】ファクシミリ装置は、両面読取であると両面同時読取であることを明示する両面読取明示情報を付加するかチェックして、付加するときには、表面密着センサ部と裏面密着センサ部で原稿を同時に読み取って画情報蓄積用メモリにページ毎に仕分けして記憶した後、両面読取明示情報、例えば、「両面文書」をページ毎の画情報に付加して相手ファクシミリ装置に送信する（ステップＳ１～Ｓ５）。両面読取でないときや両面読取明示情報付加が選択されていないときには、読み取った原稿の画情報に両面読取明示情報を付加することなく送信する（ステップＳ６、Ｓ７、Ｓ５）。



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【特許請求の範囲】

【請求項１】原稿の表面の画像を読み取って画情報を出力する表面読取手段と、前記原稿の裏面の画像を読み取って画情報を出力する裏面読取手段と、を備え、両面に画像の記載された両面原稿の画像を前記表面読取手段と前記裏面読取手段により１回の読取動作で同時に読み取る両面同時読取を行うファクシミリ装置において、前記表面読取手段と前記裏面読取手段の読み取った前記両面原稿の前記画情報をページ毎に仕分けして記憶する画情報記憶手段と、前記画情報記憶手段の記憶する前記ページ単位の画情報の所定位置に前記両面原稿を前記両面同時読取により読み取った画情報である旨を明示する両面読取明示情報を付加する両面情報付加手段と、前記表面読取手段と前記裏面読取手段で前記原稿を前記両面同時読取により読み取ると、前記画情報記憶手段に記憶されている当該両面同時読取で読み取られたページ単位の前記画情報に前記両面情報付加手段により前記両面読取明示情報を付加させた後、ファクシミリ送信する制御手段と、を備えたことを特徴とするファクシミリ装置。

【請求項２】原稿の表面の画像を読み取って画情報を出力する表面読取手段と、前記原稿の裏面の画像を読み取って画情報を出力する裏面読取手段と、を備え、両面に画像の記載された両面原稿の画像を前記表面読取手段と前記裏面読取手段により１回の読取動作で同時に読み取る両面同時読取を行うファクシミリ装置において、前記表面読取手段と前記裏面読取手段の読み取った前記両面原稿の前記画情報をページ毎に仕分けして記憶する画情報記憶手段と、前記画情報記憶手段の記憶する前記表面及び前記裏面の前記画情報の所定位置に前記両面原稿の表裏面のうちいずれの面の画情報であるかを明示する表裏面明示情報を付加する両面情報付加手段と、前記表面読取手段と前記裏面読取手段で前記原稿を前記両面同時読取により読み取ると、前記画情報記憶手段に記憶されている当該両面同時読取で読み取られた前記表面及び前記裏面の前記画情報に前記両面情報付加手段により前記表裏面明示情報を付加させた後、ファクシミリ送信する制御手段と、を備えたことを特徴とするファクシミリ装置。

【請求項３】前記ファクシミリ装置は、前記両面情報付加手段による前記両面読取明示情報あるいは前記表裏面明示情報の付加を行うか否かの選択を行う選択手段を、さらに備え、前記制御手段は、前記選択手段により前記両面読取明示情報あるいは前記表裏面明示情報の付加が選択されているときのみ、前記両面情報付加手段に前記両面読取明示情報あるいは前記表裏面明示情報を前記画情報に付加させた後、ファクシミリ送信することを特徴とする請求項１または請求項２記載のファクシミリ装置。

【発明の詳細な説明】

【０００１】

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【発明の属する技術分野】本発明は、ファクシミリ装置に関し、詳細には、表面と裏面に画像の記録された両面原稿を一回の読取動作で読み取って送信するファクシミリ装置に関する。

【０００２】

【従来の技術】近時、原稿の画像をスキャナ等で読み取った画情報をＰＳＴＮ（Public Swiched Telephone Network：公衆電話網）等のアナログ通信網やＩＳＤＮ（Integrated Services Digital Network ：サービス総合デジタル網）等のデジタル通信網を介して相手方に送信することにより、画情報の送受信を行うファクシミリ装置が開発され、実用化されている。

【０００３】ところが、通常、従来のファクシミリ装置は、スキャナで１回に読み取れる画情報が原稿の片側面だけであったため、表面と裏面の両方に画像の記録されている両面原稿を読み取る場合、両面原稿の表面と裏面のコピーをとって、表側と裏側とをそれぞれ１回ずつ走査しなくてはならず、ファクシミリ装置の利用性が悪いという問題があった。

【０００４】そこで、従来、送信原稿の表面と裏面の両側にそれぞれ読取部を配置し、１回の読取動作で両面の画像を読み取ることにより、両面原稿の送信操作上の便宜性を向上させたファクシミリ装置が提案されている（特開平２－１２４６８０号公報参照）。

【０００５】ところが、このファクシミリ装置にあっては、原稿の裏面に画像が記載されていない場合にも、裏面の読取画情報、すなわち、白紙の画情報をそのまま送信してしまうという問題があった。

【０００６】そこで、従来、原稿の裏面を読み取ってメモリに格納したデータを点検して、裏面に記載があるかどうかを判断し、原稿の裏面に記載がある場合のみ、裏面の情報を表面の情報の送信に続いて送信するファクシミリ装置の両面原稿送信方式が提案されている（特開平２－３９７６５号公報参照）。

【０００７】

【発明が解決しようとする課題】しかしながら、このような従来のファクシミリ装置にあっては、表面と裏面の両方に画像の記録された両面原稿を一回の読取動作で読み取り、裏面に画像の記載があるか判断して裏面に画像の記載があるときのみ、単に、裏面の画情報を表面の画情報の送信に続いて送信するようになっていたため、両面読取機能を備えたファクシミリ装置の利用性を向上させる上で、なお問題があった。

【０００８】すなわち、両面原稿を両面読取機能をオフにして読み取りを行った場合、相手先には、両面原稿の片面の画情報のみが送信されるが、相手先は、当該受信原稿の元原稿（送信原稿）が両面原稿であるかどうかが分からないため、重要な情報が欠落した状態で送信側と受信側の通信が完了し、ファクシミリ装置の利用性が悪いという問題があった。

【０００９】また、特開平２－３９７６５号公報記載のファクシミリ装置の両面原稿送信方式を利用しないで、片面原稿を両面読取機能をオンにして読み取りを行って送信した場合、相手先には、画情報の記録された受信原稿と画情報の記録されていない白紙の受信原稿が１頁毎に送信されてくることになり、受信側のオペレータに重要な画情報が欠落したと勘違いされ、ファクシミリ装置の利用性が悪いという問題があった。

【００１０】さらに、特開平２－３９７６５号公報記載のファクシミリ装置の両面原稿送信方式を利用して送信した場合でも、複数枚の両面原稿に片面のみに画像の記載された片面原稿が混在している原稿を読み取って送信すると、受信側では、受信原稿のどの頁が元原稿（送信原稿）の表裏いずれの画情報であるかが分からず、例えば、両面記載の申請書が片面原稿に混ざっていると、受信側では、受信原稿のどの頁とどの頁が元原稿の表裏の組み合わせであるかが分からないため、両面記録可能な複写機等で元原稿を正確に再現することができず、ファクシミリ装置の利用性が悪いという問題があった。

【００１１】そこで、請求項１記載の発明は、両面原稿を表面読取手段と裏面読取手段で両面同時読取により読み取ると、当該両面同時読取で読み取ったページ単位の画情報に両面同時読取により読み取った画情報である旨を明示する両面読取明示情報を付加させた後、ファクシミリ送信することにより、受信側に原稿が両面原稿であって両面同時読取により読み取られたことを分かるようにし、受信側で受信原稿を適切、かつ、確実に、送信原稿と同じように復元できるようにして、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、適切に、かつ、容易に対応することのできる利用性の良好なファクシミリ装置を提供することを目的としている。

【００１２】請求項２記載の発明は、両面原稿を表面読取手段と裏面読取手段で両面同時読取により読み取ると、当該両面同時読取で読み取られた表面及び裏面の画情報に両面原稿の表裏面のうちいずれの面の画情報であるかを明示する表裏面明示情報を付加させた後、ファクシミリ送信することにより、受信側に原稿が両面原稿であって受信原稿のどのページが送信原稿の表裏面いずれのページであるかを分かるようにして、受信側で受信原稿をより一層適切、かつ、確実に、送信原稿と同じように復元できるようにし、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、より一層適切に、かつ、容易に対応することのできる利用性の良好なファクシミリ装置を提供することを目的としている。

【００１３】請求項３記載の発明は、選択手段により両面読取明示情報あるいは表裏面明示情報の付加が選択されているときのみ、両面読取明示情報あるいは表裏面明示情報を画情報に付加させた後、ファクシミリ送信することにより、送信原稿が表裏面の区別を厳密に要する場合や両面原稿であることを知らせたい受信者に送信する場合にのみ両面読取明示情報や表裏面明示情報を付加して送信し、画情報の量を不必要に増やすことなく、利用性の良好なファクシミリ装置を提供することを目的としている。

【００１４】

【課題を解決するための手段】請求項１記載の発明のファクシミリ装置は、原稿の表面の画像を読み取って画情報を出力する表面読取手段と、前記原稿の裏面の画像を読み取って画情報を出力する裏面読取手段と、を備え、両面に画像の記載された両面原稿の画像を前記表面読取手段と前記裏面読取手段により１回の読取動作で同時に読み取る両面同時読取を行うファクシミリ装置において、前記表面読取手段と前記裏面読取手段の読み取った前記両面原稿の前記画情報をページ毎に仕分けして記憶する画情報記憶手段と、前記画情報記憶手段の記憶する前記ページ単位の画情報の所定位置に前記両面原稿を前記両面同時読取により読み取った画情報である旨を明示する両面読取明示情報を付加する両面情報付加手段と、前記表面読取手段と前記裏面読取手段で前記原稿を前記両面同時読取により読み取ると、前記画情報記憶手段に記憶されている当該両面同時読取で読み取られたページ単位の前記画情報に前記両面情報付加手段により前記両面読取明示情報を付加させた後、ファクシミリ送信する制御手段と、を備えることにより、上記目的を達成している。

【００１５】上記構成によれば、両面原稿を表面読取手段と裏面読取手段で両面同時読取により読み取ると、当該両面同時読取で読み取ったページ単位の画情報に両面同時読取により読み取った画情報である旨を明示する両面読取明示情報を付加させた後、ファクシミリ送信しているので、受信側に原稿が両面原稿であって両面同時読取により読み取られたことが分かるようにすることができ、受信側で受信原稿を適切、かつ、確実に、送信原稿と同じように復元できるようにすることができる。したがって、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、適切に、かつ、容易に対応することができ、ファクシミリ装置の利用性を向上させることができる。

【００１６】請求項２記載の発明のファクシミリ装置は、原稿の表面の画像を読み取って画情報を出力する表面読取手段と、前記原稿の裏面の画像を読み取って画情報を出力する裏面読取手段と、を備え、両面に画像の記載された両面原稿の画像を前記表面読取手段と前記裏面読取手段により１回の読取動作で同時に読み取る両面同時読取を行うファクシミリ装置において、前記表面読取

手段と前記裏面読取手段の読み取った前記両面原稿の前記画情報をページ毎に仕分けして記憶する画情報記憶手段と、前記画情報記憶手段の記憶する前記表面及び前記裏面の前記画情報の所定位置に前記両面原稿の表裏面のうちいずれの面の画情報であるかを明示する表裏面明示情報を付加する両面情報付加手段と、前記表面読取手段と前記裏面読取手段で前記原稿を前記両面同時読取により読み取ると、前記画情報記憶手段に記憶されている当該両面同時読取で読み取られた前記表面及び前記裏面の前記画情報に前記両面情報付加手段により前記表裏面明示情報を付加させた後、ファクシミリ送信する制御手段と、を備えることにより、上記目的を達成している。

【００１７】上記構成によれば、両面原稿を表面読取手段と裏面読取手段で両面同時読取により読み取ると、当該両面同時読取で読み取られた表面及び裏面の画情報に両面原稿の表裏面のうちいずれの面の画情報であるかを明示する表裏面明示情報を付加させた後、ファクシミリ送信しているので、受信側に原稿が両面原稿であって受信原稿のどのページが送信原稿の表裏面いずれのページであるかを分かるようにすることができ、受信側で受信原稿をより一層適切、かつ、確実に、送信原稿と同じように復元できるようにすることができる。したがって、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、より一層適切に、かつ、容易に対応することができ、ファクシミリ装置の利用性を向上させることができる。

【００１８】上記各場合において、例えば、請求項３に記載するように、前記ファクシミリ装置は、前記両面情報付加手段による前記両面読取明示情報あるいは前記表裏面明示情報の付加を行うか否かの選択を行う選択手段を、さらに備え、前記制御手段は、前記選択手段により前記両面読取明示情報あるいは前記表裏面明示情報の付加が選択されているときのみ、前記両面情報付加手段に前記両面読取明示情報あるいは前記表裏面明示情報を前記画情報に付加させた後、ファクシミリ送信するものであってもよい。

【００１９】上記構成によれば、選択手段により両面読取明示情報あるいは表裏面明示情報の付加が選択されているときのみ、両面読取明示情報あるいは表裏面明示情報を画情報に付加させた後、ファクシミリ送信するので、送信原稿が表裏面の区別を厳密に要する場合や両面原稿であることを知らせたい受信者に送信する場合にのみ両面読取明示情報や表裏面明示情報を付加して送信することができ、画情報の量を不必要に増やすことなく、ファクシミリ装置の利用性を向上させることができる。

【００２０】

【発明の実施の形態】以下、本発明の好適な実施の形態を添付図面に基づいて詳細に説明する。なお、以下に述べる実施の形態は、本発明の好適な実施の形態であるから、技術的に好ましい種々の限定が付されているが、本発明の範囲は、以下の説明において特に本発明を限定する旨の記載がない限り、これらの態様に限られるものではない。

【００２１】図１～図５は、本発明のファクシミリ装置の一実施の形態を示す図であり、図１は、本発明のファクシミリ装置の一実施の形態を適用したファクシミリ装置１の要部回路ブロック図である。

【００２２】図１において、ファクシミリ装置１は、制御部２、表面密着センサ部３、裏面密着センサ部４、Ａ／Ｄ変換部５、ディジタル画像処理部６、画情報蓄積用メモリ７、モデム８、通信アナログ部９、操作表示部１０、キャラクタデータ生成部１１、ラインバッファ１２及び符号化・復号化部１３等を備え、上記各部は、バス１４により接続されている。

【００２３】制御部（制御手段）２は、ＣＰＵ（Central Processing Unit）、ＲＯＭ（Read Only Memory）及びＲＡＭ（Random Access Memory）等を備え、ＲＯＭ内には、ファクシミリ装置１のシステムプログラムや後述する両面画情報制御処理プログラム等の各種プログラム及び上記各プログラムを実行するのに必要な各種データやシステムデータ等が格納されている。制御部２は、そのＣＰＵがＲＯＭ内のプログラムに基づいてＲＡＭをワークメモリとして使用しつつ、ファクシミリ装置１の各部を制御して、ファクシミリ装置１としての基本処理を実行するとともに、両面画情報制御処理を実行する。また、制御部２は、そのＲＡＭの一部にユーザ情報管理領域を形成し、後述する両面読取明示情報や表裏面明示情報を画情報に付加するか否かの設定情報をユーザ情報管理領域に記憶する。

【００２４】表面密着センサ部（表面読取手段）３は、例えば、ＣＣＤ（Charge Coupled Device）を利用した密着イメージスキャナが利用されており、原稿の搬送路に沿って配設されている。表面密着センサ部３は、搬送路上を搬送される原稿の表面を走査して、原稿の表面の画像を読み取って、画情報としてＡ／Ｄ変換部５に出力する。

【００２５】裏面密着センサ部（裏面読取手段）４は、表面密着センサ部３と同様に、例えば、ＣＣＤを利用した密着イメージスキャナが利用されており、原稿の搬送路に沿って当該搬送路の表面密着センサ部３と反対側に配設されている。裏面密着センサ部４は、原稿の裏面を走査して、原稿の裏面の画像を読み取って画情報としてＡ／Ｄ変換部５に出力する。なお、表面読取手段と裏面読取手段は、上記のように表面密着センサ部３及び裏面密着センサ部４のように、密着センサを用いたものに限るものではなく、例えば、縮小光学系を用いたものであってもよい。

【００２６】画情報蓄積用メモリ（画情報記憶手段）７は、例えば、ハードディスク等で構成され、表面密着セ

ンサ部３及び裏面密着センサ部４により読み取られた生の画情報や符号化・復号化部１３で符号化された全原稿の符号化画情報等を蓄積するとともに、受信した符号化画情報を蓄積する。

【００２７】モデム８は、制御部２の制御下で動作して、送信信号の変調及び受信信号の復調を行う。

【００２８】通信アナログ部９には、回線Ｌ、例えば、公衆電話回線に接続されており、通信アナログ部９は、制御部２の制御下で動作して、回線Ｌからの発呼に対して自動着呼し、また、回線Ｌへの自動発呼処理を行うとともに、相手ファクシミリ装置との間でファクシミリ制御信号を交換して、ファクシミリ通信手順を実行する。

【００２９】操作表示部（選択手段）１０は、テンキーやスタートキー及びファンクションキー等の各種操作キーを備えるとともに、ディスプレイ（例えば、液晶ディスプレイ）を備え、操作キーからは、送信操作等の各種命令が入力され、ディスプレイには、操作キーから入力された命令内容やファクシミリ装置１からオペレータに通知する各種情報が表示される。特に、操作表示部１０には、原稿を表面密着型センサ部３と裏面密着センサ部４とにより同時に読み取るか否かの同時読取のオン／オフを設定する同時読取オン／オフキー、両面画情報制御処理において両面読取明示情報を画情報に付加するか否かの設定を行う両面読取明示情報付加設定キー及びや表裏面明示情報を画情報に付加するか否かの設定を行う表裏面明示情報付加設定キー等が設けられている。これらの同時読取オン／オフキー、両面読取明示情報付加設定キー及び表裏面明示情報付加設定キーの設定内容は、制御部２のＲＡＭのユーザ情報管理領域に記憶される。

【００３０】キャラクタデータ生成部１１は、各種キャラクタデータ、特に、両面同時読み取りを行った際に、両面同時読取を行った旨を明示する両面読取明示情報や表裏面を明示する表裏面明示情報を記憶し、制御部２の制御下で、これらの両面読取明示情報や表裏面明示情報を生成して、ラインバッファ１２に転送する。

【００３１】ラインバッファ１２は、符号化・復号化部１３で符号化あるいは復号化する画情報を１ライン分記憶し、１ライン分の画情報を蓄積すると、当該画情報を符号化・復号化部１３に転送する。制御部２は、画情報蓄積用メモリ７からラインバッファ１２に１ページの先頭ラインを転送すると、キャラクタデータ生成部１１から両面読取明示情報あるいは表裏面明示情報をラインバッファ１２に転送して、画情報を両面読取明示情報あるいは表裏面明示情報で上書きし、画情報に両面読取明示情報あるいは表裏面明示情報を付加する。したがって、上記キャラクタデータ生成部１１及びラインバッファ１２は、両面情報付加手段として機能する。

【００３２】符号化・復号化部１３は、画情報の蓄積の効率化や伝送時間の短縮化を図るためのものであり、所定の符号化方式に従って画情報を符号化し、また、符号

化された画情報を復号化する。

【００３３】次に、本実施の形態の動作を説明する。ファクシミリ装置１は、両面原稿の表裏の画像を表面密着センサ部３と裏面密着センサ部４により同時に読み取って、ファクシミリ送信するが、表面密着センサ部３と裏面密着センサ部４による同時読取を行ったか否かの両面読取明示情報、また、表面密着センサ部３と裏面密着センサ部４のいずれで読み取った画情報かを示す表裏面明示情報をオペレータの選択により付加する両面画情報制御処理を行うところにその特徴がある。

【００３４】まず、両面同時読取か否かを示す両面読取明示情報をユーザの選択に応じて画情報に付加する場合の両面画情報制御処理について、図２及び図３に基づいて、以下説明する。

【００３５】ファクシミリ装置１は、原稿が図示しない原稿台にセットされ、操作表示部１０により送信相手先の電話番号が入力されてスタートキーが投入されると、制御部２が、両面同時読取が操作表示部１０のキー操作によりセットされているかチェックし（ステップＳ１）、両面同時読取がオンにセットされていると、両面同時読取である旨の両面読取明示情報の付加を行うかどうかを、制御部２のＲＡＭのユーザ情報管理領域を調べてチェックする（ステップＳ２）。

【００３６】ステップＳ２で、両面読取明示情報の付加を行う場合には、制御部２は、表面密着センサ部３と裏面密着センサ部４を駆動させて、原稿の読取動作を行い（ステップＳ３）、読み取った原稿の画像の画情報に、図３に示すように、当該送信画情報が両面同時読み取りを行った画情報である旨を示す両面読取明示情報、例えば、「両面文書」を付加して（ステップＳ４）、符号化・復号化部１３で符号化した後、送信する（ステップＳ５）。

【００３７】すなわち、この場合、表面密着センサ部３と裏面密着センサ部４より同時に原稿の表面と裏面の画像をライン毎に読み取りを行って、表面密着センサ部３と裏面密着センサ部４から交互にライン毎に画情報をＡ／Ｄ変換部５に入力し、Ａ／Ｄ変換部５で当該画情報をディジタル変換した後、ディジタル画像処理部６で、必要な画像処理を施して、表面の画情報と裏面の画情報を仕分けして、画情報蓄積用メモリ７に分けて記憶させる。例えば、ディジタル画像処理部６で画像処理したライン毎の画情報を画情報蓄積用メモリ７に蓄積するに際して、１ラインおきに画情報蓄積用メモリ７の連続するアドレスに格納することにより、原稿の表面の画情報と裏面の画情報とを仕分けするとともに、表面の画情報と裏面の画情報を連続したアドレスにそれぞれ１ページずつ蓄積する。全ての原稿の画情報を表面密着センサ部３と裏面密着センサ部４で同時に読み取って、上記のように表面と裏面とに仕分けして画情報蓄積用メモリ７に蓄積すると、制御部２は、画情報蓄積用メモリ７に蓄積さ

れている画情報のうち先頭ページである表面の画情報の先頭ラインから順次読み出して、ラインバッファ１２に転送し、ラインバッファ１２から符号化・復号化部１３に転送して、符号化・復号化部１３で所定の符号化方式で符号化させる。

【００３８】このとき、制御部２は、例えば、先頭ページの先頭の数ラインの画情報をラインバッファ１２に転送すると、キャラクタデータ生成部１１に両面読取明示情報のキャラクタデータを生成させて、ファクシミリ装置１の発信元情報付加機能（ＴＴＩ）と同様に、当該両面読取明示情報のキャラクタデータで、ラインバッファ１２に転送し、ラインバッファ１２上の画情報の一部を上書きすることで、画情報に両面読取明示情報を付加する。

【００３９】例えば、キャラクタデータ生成部１１は、数画素×数ライン（例えば、１６画素×１６ライン）で表される１つのキャラクタ（文字）を連結してできる文字情報を生成するとともに、ラインバッファ１２上に画情報と同じ構成でデータ転送可能なＩ／Ｆを備えており、ラインバッファ１２上の画情報に上書きすることで画情報に両面読取明示情報を付加する。

【００４０】このようにして両面読取明示情報の付加された画情報を符号化・復号化部１３で、符号化して、モデム８及び通信アナログ部９を介して相手ファクシミリ装置にファクシミリ送信する。

【００４１】上記処理を各ページの画情報毎に行って、画情報の各ページ毎に、図３に示したように、両面読取明示情報を付加し、当該両面読取明示情報を付加した画情報をファクシミリ送信する。

【００４２】上記ステップＳ２で、両面読取明示情報を付加しないときには、制御部２は、上記同様に原稿の読み取りを表面密着センサ部３と裏面密着センサ部４により行い、読み取った画情報を上記同様に、ページ毎に仕分けして画情報蓄積用メモリ７に蓄積する（ステップＳ６）。全ての原稿の両面同時読取を完了すると、次に、画情報蓄積用メモリ７から先頭ページの先頭ラインから順次読み出して、ラインバッファ１２に転送し、ラインバッファ１２で両面読取明示情報の付加処理を行うことなく、必要に応じて、通常のＴＴＩの付加等のみを行った後（ステップＳ７）、符号化・復号化部１３で符号化して、送信する（ステップＳ５）。

【００４３】また、上記ステップＳ１で、両面読取でないときには、制御部２は、原稿台への原稿のセット状態、すなわち、原稿面が表面密着センサ部３と裏面密着センサ部４のいずれであるか、あるいは、操作表示部１０の選択に応じて、表面密着センサ部３と裏面密着センサ部４のいずれか一方のみを駆動して、原稿の画像の読み取りを順次行って、画情報蓄積用メモリ７に蓄積する。この場合、通常、表面密着センサ部３側に画像の記憶された原稿面を向けてセットされ、表面密着センサ部

３により原稿の画像を読み取る（ステップＳ６）。

【００４４】全ての原稿の画像の読み取りと画情報蓄積用メモリ７への蓄積が完了すると、制御部２は、画情報蓄積用メモリ７から画情報を先頭ページの先頭ラインから順次読み出して、ラインバッファ１２を介して両面読取明示情報を画情報に付加することなく、符号化・復号化部１３に転送し（ステップＳ７）、符号化・復号化部１３で画情報を符号化して、相手先ファクシミリ装置にファクシミリ送信する。

【００４５】したがって、両面原稿を表面密着センサ部３と裏面密着センサ部４で両面同時読取により読み取ると、当該両面同時読取で読み取ったページ単位の画情報に両面同時読取により読み取った画情報である旨を明示する両面読取明示情報を付加した後、ファクシミリ送信するので、受信側に原稿が両面原稿であって両面同時読取により読み取られたことが分かるようにすることができ、受信側で受信原稿を適切、かつ、確実に、送信原稿と同じように復元できるようにすることができる。したがって、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、適切に、かつ、容易に対応することができ、ファクシミリ装置１の利用性を向上させることができる。

【００４６】また、両面読取明示情報の付加が選択されているときのみ、両面読取明示情報を画情報に付加させて、ファクシミリ送信しているので、送信原稿が表裏面の区別を厳密に要する場合や両面原稿であることを知らせたい受信者に送信する場合にのみ両面読取明示情報を付加して送信することができ、画情報の量を不必要に増やすことなく、ファクシミリ装置１の利用性を向上させることができる。

【００４７】なお、上記処理においては、両面読取明示情報をページの先頭の数ライン部分に付加する場合について説明したが、両面読取明示情報の付加する位置は、ページの先頭の数ライン分の部分に限るものではなく、原稿の画像の読み取りに影響しない空き部分であれば、どの位置に付加してもかまわない。また、付加する方法は、上記方法に限るものではない。さらに、上記処理においては、全てのページに両面読取明示情報を付加しているが、全てのページに付加するものに限るものではなく、所定のページにのみ、例えば、先頭ページにのみ両面読取明示情報を付加するようにしてもよい。

【００４８】次に、両面同時読取を行った画情報に表裏面を明確にする表裏面明示情報をユーザの選択に応じて付加する場合の両面画情報情報制御処理について、図４及び図５に基づいて、以下説明する。

【００４９】ファクシミリ装置１は、原稿が図示しない原稿台にセットされ、操作表示部１０により送信相手先の電話番号が入力されてスタートキーが投入されると、制御部２が、両面同時読取が操作表示部１０のキー操作

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によりセットされているかチェックし（ステップＰ１）、両面同時読取がオンにセットされていると、両面同時読取された原稿の表裏面のいずれの面であるかを示す表裏面明示情報の付加を行うかどうかを、制御部２のＲＡＭのユーザ情報管理領域を調べてチェックする（ステップＰ２）。

【００５０】ステップＰ２で、表裏面明示情報の付加を行う場合には、制御部２は、表面密着センサ部３と裏面密着センサ部４を駆動させて、原稿の読取動作を行い（ステップＰ３）、読み取った原稿の画像の画情報に、図５に示すように、当該送信画情報が表裏いずれの画情報であるかを示す表裏面明示情報、例えば、「表」、「裏」を、当該画情報の表裏を判別して（ステップＰ４）、表裏それぞれの画情報に付加し（ステップＰ５、Ｐ６）、符号化・復号化部１３で符号化した後、送信する（ステップＰ７）。

【００５１】すなわち、上記同様に、表面密着センサ部３と裏面密着センサ部４より同時に原稿の表面と裏面の画像をライン毎に読み取りを行って、表面密着センサ部３と裏面密着センサ部４から交互にライン毎に画情報をＡ／Ｄ変換部５に入力し、Ａ／Ｄ変換部５で当該画情報をディジタル変換した後、ディジタル画像処理部６で、必要な画像処理を施して、表面の画情報と裏面の画情報に仕分けして、画情報蓄積用メモリ７に記憶させる。全ての原稿の画情報を表面密着センサ部３と裏面密着センサ部４で同時に読み取って、上記のように表面と裏面とに仕分けして画情報蓄積用メモリ７に蓄積すると、制御部２は、画情報蓄積用メモリ７の画情報を表面の画情報の先頭ラインから順次読み出して、ラインバッファ１２に転送し、例えば、先頭の数ラインの画情報をラインバッファ１２に転送すると、当該画情報が表裏いずれの面の画情報であるかを判別し、キャラクタデータ生成部１１に当該表裏に対応する表裏面明示情報のキャラクタデータを生成させて、当該表裏面明示情報のキャラクタデータを、ラインバッファ１２に転送し、ラインバッファ１２上の画情報の一部を上書きすることで画情報に表裏面明示情報を付加する。

【００５２】このようにして表裏面明示情報の付加された画情報を符号化・復号化部１３で、符号化して、モデム８及び通信アナログ部９を介して相手ファクシミリ装置にファクシミリ送信する。

【００５３】上記処理を各ページの画情報毎に行って、画情報の各ページ毎に、図５に示したように、表裏面明示情報を付加し、当該表裏面明示情報を付加した画情報をファクシミリ送信する。

【００５４】上記ステップＰ２で、表裏面明示情報を付加しないときには、制御部２は、上記同様に原稿の読み取りを表面密着センサ部３と裏面密着センサ部４により行い、読み取った画情報を上記同様に、ページ毎に仕分けして画情報蓄積用メモリ７に蓄積する（ステップＰ８）。全ての原稿の両面同時読取を完了すると、次に、画情報蓄積用メモリ７から先頭ページの先頭ラインから順次読み出して、ラインバッファ１２に転送し、ラインバッファ１２で表裏面明示情報の付加処理を行うことなく、必要に応じて、通常のＴＴＩの付加等のみを行った後、符号化・復号化部１３で符号化して、送信する（ステップＰ７）。

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【００５５】また、上記ステップＰ１で、両面同時読取でないときには、制御部２は、原稿台への原稿のセット状態、すなわち、原稿面が表面密着センサ部３と裏面密着センサ部４のいずれであるか、あるいは、操作表示部１０の選択に応じて、表面密着センサ部３と裏面密着センサ部４のいずれか一方のみを駆動して、原稿の画像の読み取りを順次行って、画情報蓄積用メモリ７に蓄積する（ステップＰ８）。この場合、通常、表面密着センサ部３側に画像の記憶された原稿面を向けて、原稿がセットされ、表面密着センサ部３により原稿の画像を読み取る。

【００５６】全ての原稿の画像の読み取りと画情報蓄積用メモリ７への蓄積が完了すると、制御部２は、画情報蓄積用メモリ７から画情報を先頭ページの先頭ラインから順次読み出して、ラインバッファ１２を介して表裏面明示情報を画情報に付加することなく、符号化・復号化部１３に転送し、符号化・復号化部１３で画情報を符号化して、相手先ファクシミリ装置にファクシミリ送信する（ステップＰ７）。

【００５７】このように、上記処理によれば、両面原稿を表面密着センサ部３と裏面密着センサ部４で両面同時読取により読み取ると、当該両面同時読取で読み取られた表面及び裏面の画情報に両面原稿の表裏面のうちいずれの面の画情報であるかを明示する表裏面明示情報を付加した後、ファクシミリ送信しているので、受信側に原稿が両面原稿であって受信原稿のどのページが送信原稿の表裏面いずれのページであるかを分かるようすることができ、受信側で受信原稿をより一層適切、かつ、確実に、送信原稿と同じように復元できるようにすることができる。したがって、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、より一層適切に、かつ、容易に対応することができ、ファクシミリ装置１の利用性を向上させることができる。

【００５８】また、表裏面明示情報の付加が選択されているときのみ、表裏面明示情報を画情報に付加させた後、ファクシミリ送信しているので、送信原稿が表裏面の区別を厳密に要する場合や両面原稿であることを知らせたい受信者に送信する場合にのみ表裏面明示情報を付加して送信することができ、画情報の量を不必要に増やすことなく、ファクシミリ装置１の利用性を向上させることができる。

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【００５９】以上、本発明者によってなされた発明を好適な実施の形態に基づき具体的に説明したが、本発明は上記のものに限定されるものではなく、その要旨を逸脱しない範囲で種々変更可能であることはいうまでもない。

【００６０】

【発明の効果】請求項１記載の発明のファクシミリ装置によれば、両面原稿を表面読取手段と裏面読取手段で両面同時読取により読み取ると、当該両面同時読取で読み取ったページ単位の画情報に両面同時読取により読み取った画情報である旨を明示する両面読取明示情報を付加させた後、ファクシミリ送信しているので、受信側に原稿が両面原稿であって両面同時読取により読み取られたことが分かるようにすることができ、受信側で受信原稿を適切、かつ、確実に、送信原稿と同じように復元できるようにすることができる。したがって、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、適切に、かつ、容易に対応することができ、ファクシミリ装置の利用性を向上させることができる。

【００６１】請求項２記載の発明のファクシミリ装置によれば、両面原稿を表面読取手段と裏面読取手段で両面同時読取により読み取ると、当該両面同時読取で読み取られた表面及び裏面の画情報に両面原稿の表裏面のうちいずれの面の画情報であるかを明示する表裏面明示情報を付加させた後、ファクシミリ送信しているので、受信側に原稿が両面原稿であって受信原稿のどのページが送信原稿の表裏面いずれのページであるかを分かるようにすることができ、受信側で受信原稿をより一層適切、かつ、確実に、送信原稿と同じように復元できるようにすることができる。したがって、両面原稿の途中に片面原稿、すなわち、裏面が白紙の原稿が含まれている場合やダブルフィードにより複数ページが欠落する等の問題が発生した場合にも、より一層適切に、かつ、容易に対応することができ、ファクシミリ装置の利用性を向上させることができる。

【００６２】請求項３記載の発明のファクシミリ装置によれば、選択手段により両面読取明示情報あるいは表裏面明示情報の付加が選択されているときのみ、両面読取明示情報あるいは表裏面明示情報を画情報に付加させた後、ファクシミリ送信するので、送信原稿が表裏面の区別を厳密に要する場合や両面原稿であることを知らせたい受信者に送信する場合にのみ両面読取明示情報や表裏面明示情報を付加して送信することができ、画情報の量を不必要に増やすことなく、ファクシミリ装置の利用性を向上させることができる。

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【図面の簡単な説明】

【図１】本発明のファクシミリ装置の一実施の形態を適用したファクシミリ装置の要部回路ブロック図。

【図２】図１のファクシミリ装置によるユーザの選択に応じて両面読取明示情報を画情報に付加する場合の両面画情報制御処理を示すフローチャート。

【図３】図２の両面画情報制御処理により両面読取明示情報の付加された送信原稿の正面図とその要部拡大図。

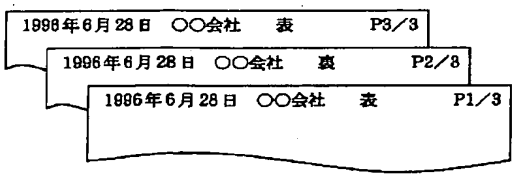
【図４】図１のファクシミリ装置によるユーザの選択に応じて表裏面明示情報を画情報に付加する場合の両面画情報制御処理を示すフローチャート。

【図５】図４の両面画情報制御処理により表裏面明示情報の付加された送信原稿の正面図。

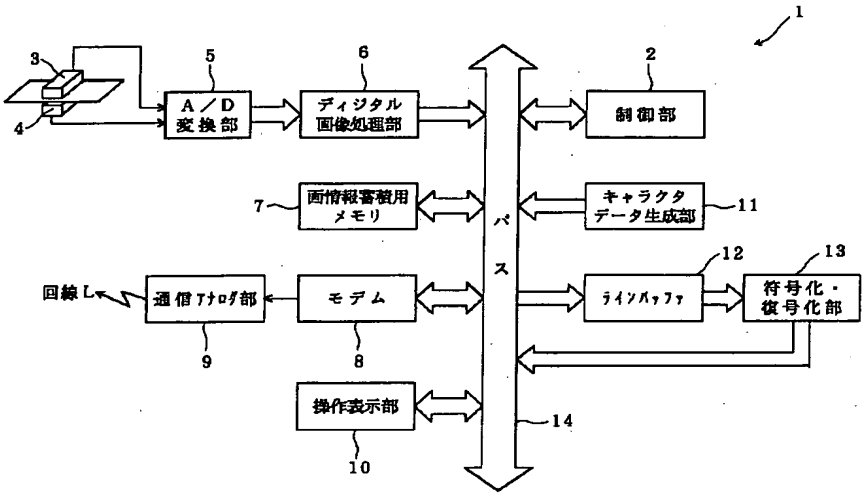
【符号の説明】

１　ファクシミリ装置
２　制御部
３　表面密着センサ部
４　裏面密着センサ部
５　Ａ／Ｄ変換部
６　ディジタル画像処理部
７　画情報蓄積用メモリ
８　モデム
９　通信アナログ部
１０　操作表示部
１１　キャラクタデータ生成部
１２　ラインバッファ
１３　符号化・復号化部
１４　バス

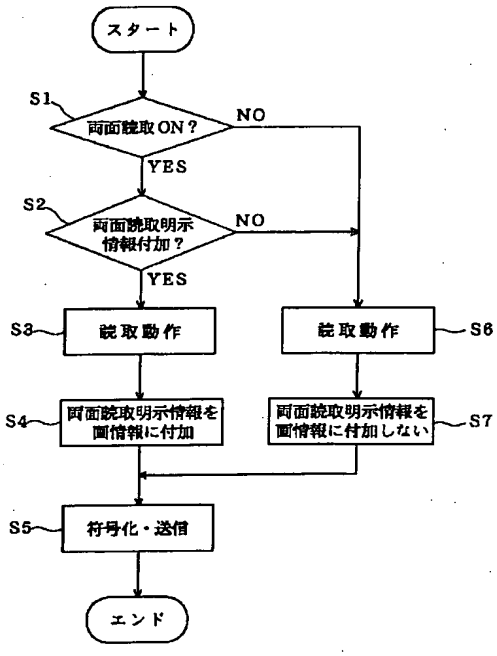
【図５】



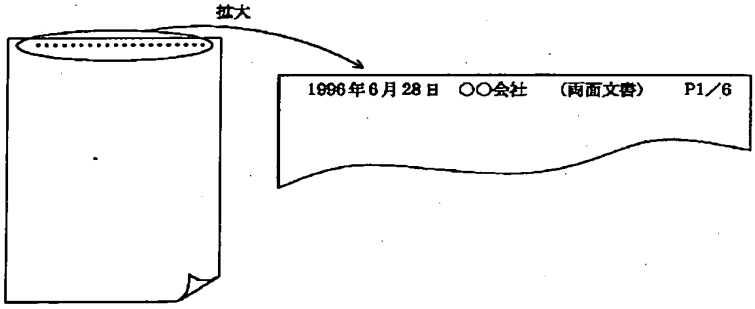
【図１】


1
3
4
5
A／D
変換部
6
ディジタル
画像処理部
2
制御部
7
画情報蓄積用
メモリ
バス
キャラクタ
データ生成部
11
回線L
通信アナログ部
9
モデム
8
12
ラインバッファ
13
符号化・
復号化部
操作表示部
10
14

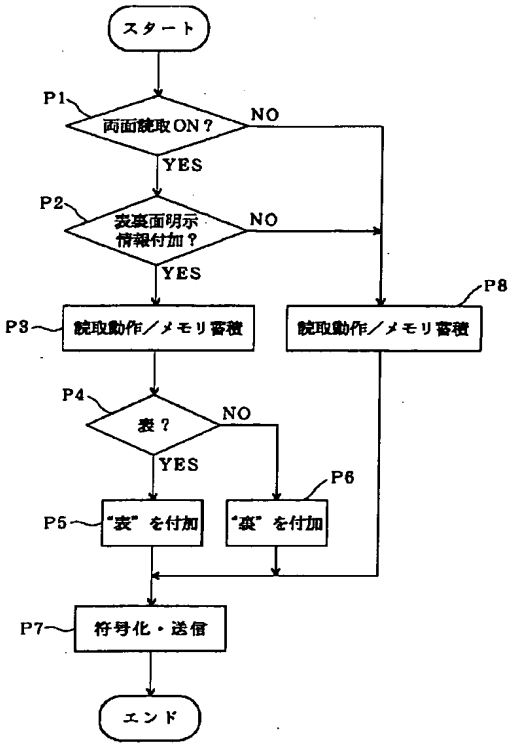
【図２】


スタート
S1
両面読取ON？
NO
YES
S2
両面読取明示
情報付加？
NO
YES
S3
読取動作
S6
読取動作
S4
両面読取明示情報を
画情報に付加
S7
両面読取明示情報を
画情報に付加しない
S5
符号化・送信
エンド

【図３】


拡大
1996年6月28日　○○会社　（両面文書）　P1／6

【図４】


スタート
P1
両面読取ON？
NO
YES
P2
表裏面明示情報付加？
NO
YES
P8
P3
読取動作／メモリ蓄積
読取動作／メモリ蓄積
P4
表？
NO
YES
P6
P5
"表"を付加
"裏"を付加
P7
符号化・送信
エンド